REMARKS

Applicants note that claims 1-27 are under consideration herein.

By the present amendment, independent claims 1, 4, 6, 8, 10, 12, 15, 17, 20 and 22 have been amended to define the features of the present invention as illustrated in Figs. 8 and 16 of the drawings of this application, for example, wherein a foreign particle detector 110 detects foreign particle defects on the substrate which has been processed and the detected signal is sent to a foreign particle detecting processing apparatus 410, for example which is separate from the foreign particle detector 110 and which processes the detected signal to provide information or data of the foreign particles and that a foreign particle generation condition of a processing apparatus is determined based upon the processed data. Further, in accordance with the present invention, as illustrated in Figure 19 and other figures of the drawings, for example a variable spatial filter 1270, for example is utilized for cutting a light reflected from a pattern formed on the substrate, which features are now recited in claims 17 and 22, for example. Applicants submit that the aforementioned features as disclosed in the specification and drawings of this application and as now set forth in the claims of this application are not disclosed or taught in the cited art.

The rejection of claims 1-27 under 35 U.S.C. §103(a) as being unpatentable over Kamoshida (4,571,685) in view of Koizumi et al. (4,614,427) is traversed insofar as it is applicable to the present claims and reconsideration and withdrawal of the rejection are respectfully requested.

At the outset, as to the requirements to support a rejection under 35 U.S.C. §103, references made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally

available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

As pointed out above, each of the independent claims has been amended to recite the feature of a foreign particle detecting processing apparatus or unit which is separate from the foreign particle detecting apparatus or unit and in which the detected signal is processed to generate foreign particle data. Also, other claims recite the utilization of a variable spatial filter.

Turning to Kamoshida irrespective of the disclosure of this reference, Applicants submit that Kamoshida does not disclose or teach the recited features of a method and system, as claimed utilizing a detecting apparatus to detect foreign particle defects on the substrate and a separate foreign particle detecting processing apparatus which receives the detected signal from the detecting apparatus and processes the detected signal to provide information in the form of processed foreign particle defect data, as claimed. More particularly, Figure 9 of Kamoshida referred to by the Examiner illustrates a film-quantity inspection apparatus C_N-1 which inspects the film thickness, film resistance, grain size, etc. and forwards values thereof to parent computers R_{N-1} R_N via a line 200. Applicants note that the film thickness, film resistance, grain size, etc. sent to the computer in Kamoshida does not represent a detected signal, but rather is processed data. Thus, irrespective of the Examiners contentions, Applicants submit that Kamoshida does not disclose or teach the recited features of each of the independent claims of this application in the sense of 35 U.S.C. §103 and all claims patentably distinguish thereover.

With respect to the addition of Koizumi et al., the Examiner indicates that Koizumi discloses a system for detecting foreign particles and it would have been obvious to modify Kamoshida with Koizumi et al to increase yield. Applicants submit that the Examiners position represents a hindsight reconstruction attempt of the present invention and is not proper. See In re Fine, supra. Furthermore, Applicants note that Koizumi et al. does not overcome the aforementioned deficiencies of Kamoshida and additionally provides no disclosure or teaching of detecting defects on a sample by cutting light reflected from a pattern formed on a substrate with a variable spatial filter, as recited in the claims of this application. Further, Koizumi et al provides no disclosure or teaching or providing foreign particle defect detection of a processed substrate, which is also not disclosed by Kamoshida, without removal of the substrate from the semiconductor fabrication line while continuing fabrication of

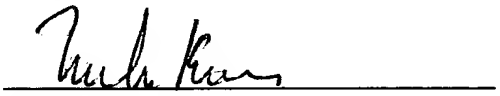
the semiconductor devices. Thus, Applicants submit that the independent claims and dependent claims of this application patentably distinguish over Koizumi et al. taken alone or in combination with Kamoshida or visa versa in the sense of 35 U.S.C. §103 and all claims should be considered thereover.

As to the dependent claims, such claims recite further features which when considered with the parent claims, further patentably distinguish over the cited art and should be considered allowable.

In view of the above amendments and remarks, Applicants submit that all claims present in this application patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courtesy solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.30598CC3) and please credit any excess fees to such deposit account.

Respectfully submitted,



Melvin Kraus
Registration No. 22,466
ANTONELLI, TERRY, STOUT & KRAUS, LLP

MK/cee
(703) 312-6600

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1, 4, 6, 8, 10, 12, 15, 17, 20 and 22 as follows:

1. (amended) A processing method for semiconductor devices in a semiconductor fabrication line, comprising the steps of:

processing a substrate in a first processing apparatus;

transferring the substrate processed in the first processing apparatus to a detecting apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;

detecting foreign particle defects on the substrate transferred to the detecting apparatus;

sending a detected signal from the detecting apparatus to a foreign particle detecting processing apparatus which is separate from the detecting apparatus;

processing the detected signal sent from the detecting apparatus by the foreign particle detecting processing apparatus;

determining a foreign particle generation condition of the processing apparatus based on ~~a data from the detecting~~ information processed by the foreign particle detecting processing apparatus;

transferring the substrate detecting in the detecting apparatus to a second processing apparatus in the semiconductor fabrication line; and

processing the substrate in the second processing apparatus, wherein an amount of the foreign particle defects detected in the detecting step is stored in a memory.

4. (amended) A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

processing a substrate in a first processing apparatus;

transferring the substrate processed in the first processing apparatus to a detecting apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;

detecting foreign particle defects on the substrate transferred to the detecting apparatus within a processing time in the step of processing;

sending a detected signal from the detecting apparatus to a foreign particle detecting processing apparatus which is separate from the detecting apparatus;

processing the detected signal sent from the detecting apparatus by the foreign particle detecting processing apparatus;

storing a data of foreign particle defects detected at the detecting step, and processed at the processing of the detected signal step in a memory; and

controlling an operation of the semiconductor fabrication line in accordance with the data of foreign particle defects detected.

6. (amended) A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

processing a substrate in a first processing apparatus which is a component of the semiconductor fabrication line;

detecting foreign particle defects on the substrate processed in the first processing apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;

sending a detected signal from the detecting apparatus to a foreign particle detecting processing apparatus which is separate from the detecting apparatus;

processing the detected signal sent from the detecting apparatus by the foreign particle detecting processing apparatus;

counting an amount of foreign particle defects detected at the detecting step and processed at the processing of the detected signal step; and

controlling an operation of the semiconductor fabrication line in accordance with the data of foreign particle defects detected.

8. (amended) A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

processing a substrate in a processing apparatus which is a component of the semiconductor fabrication line;

detecting foreign particle defects on the substrate processed in the processing apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices;

sending a detected signal from the detecting apparatus to a foreign particle detecting processing apparatus which is separate from the detecting apparatus;

processing the detected signal sent from the detecting apparatus by the foreign particle detecting processing apparatus;

obtaining information of distribution of foreign particle defects on the substrate from the processed detected signal obtained at the step of processing of the detected signal and storing the obtained information in a memory;

wherein the step of detecting foreign particle defects is performed in real time.

10. (amended) A processing method for semiconductor devices in a semiconductor fabrication line, comprising:

processing a substrate in a processing apparatus which is a component of the semiconductor fabrication line;

detecting foreign particle defects on the substrate processed in the processing apparatus without removal of the substrate from the semiconductor fabrication line while continuing fabrication of the semiconductor devices; ~~and~~

sending a detected signal from the detecting apparatus to a foreign particle detecting processing apparatus which is separate from the detecting apparatus;

processing the detected signal sent from the detecting apparatus by the foreign particle detecting processing apparatus;

determining a foreign particle generation condition of the processing apparatus using information ~~of detecting~~ obtained at the step of processing the detected signal.

12. (amended) A semiconductor processing method, comprising the steps of:

detecting foreign particle defects on a substrate by a foreign particle detection means having a valuable spatial filter to cut a light reflected from a pattern formed on the substrate attached to at least one processing apparatus which is a component of a semiconductor fabricating system; ~~and~~

sending a detected signal from the foreign particle detection means to a foreign particle detecting processing apparatus which is separate from the foreign particle detection means;

determining the foreign particle generating condition of at least one of the at least one processing apparatus.

15. (amended) A semiconductor processing system, comprising:

at least one processing apparatus to process a substrate, the at least one processing apparatus being a component of the semiconductor processing system;

at least one detecting unit which is attached to said at least one processing apparatus and detects foreign particle defects on the substrate; ~~and~~

a foreign particle detecting processing unit which is separate from the at least one detecting unit and receives a detected signal from the at least one detecting unit to process the received detected signal; and

a determining unit to determine a foreign particle generating condition from data of the ~~detecting~~ foreign particle detecting processing unit.

17. (amended) A semiconductor processing system, comprising:

at least one processing apparatus to process a substrate, the at least one processing apparatus being a component of the semiconductor processing system;

a detecting unit which is attached to said at least one processing apparatus and detects foreign particle defects on the substrate with a sensor by cutting a light reflected from a pattern formed on the substrate with a variable spatial filter; ~~and~~

a foreign particle detecting processing unit which is separate from the detecting unit and receives a detected signal from the detecting unit to process the received detected signal; and

a foreign particle control system which receives foreign particle data ~~detected~~ processed by the foreign particle detecting processing unit.

20. (amended) A semiconductor processing method comprising the steps of:

detecting foreign particle defects on a substrate during processing of the substrate in a semiconductor fabrication line by a foreign particle detecting unit attached to one processing apparatus of the semiconductor fabrication line; ~~and~~

sending a detected signal from the foreign particle detecting unit to a foreign particle detecting processing which is separate from the foreign particle detecting unit; and

determining the foreign particle generation condition of the semiconductor fabrication line in accordance with foreign particle processed data.

22. (amended) A semiconductor processing method comprising the steps of:

processing a substrate with a first processing apparatus which is a component of a semiconductor fabricating system;

transferring the substrate from the first processing apparatus to a foreign particle detection unit attached to the first processing apparatus;

detecting foreign particle defects on a substrate by the foreign particle detection unit having a variable spatial filter to cut a light reflected from a pattern formed on the substrate;

sending a detected signal from the foreign particle detection unit to a foreign particle detection processing which is separate from the foreign particle detection unit; and

transferring the substrate from the foreign particle detection unit to a second processing apparatus which is a component of the semiconductor fabricating system; and

processing the substrate with the second processing apparatus.